## Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

## Listing of Claims:

1. (Currently Amended) A method for ~~precluding~~ the diagnosies of irritable bowel syndrome ~~and other noninflammatory etiologies~~, the method comprising:

obtaining a fecal sample from a person to be diagnosed; and

determining whether said sample contains an elevated level of endogenous lactoferrin, wherein if said sample does not contain an elevated level of endogenous lactoferrin, a diagnosises of irritable bowel syndrome is ~~and other noninflammatory etiologies are~~ substantially ~~pre~~concluded.

2. (Original) The method as recited in claim 1, further comprising diluting said fecal sample.

3. (Original) The method as recited in claim 2, wherein said step of diluting said fecal sample comprises diluting said sample to a 1:400 dilution factor.

4. (Previously Amended) The method as recited in claim 1, wherein said endogenous lactoferrin comprises total lactoferrin selected from the group consisting of plasma, bile, leukocytes and mucosal secretions.

5. (Original) The method as recited in claim 1, wherein said endogenous lactoferrin is qualitatively determined.

6. (Previously Amended) The method as recited in claim 1, wherein said step of determining whether said sample contains an elevated level of endogenous lactoferrin includes contacting said sample with immobilized polyclonal antibodies to human lactoferrin to create an antibody bound sample.

7. (Previously Amended) The method as recited in claim 6, wherein said step of determining whether said antibody bound sample contains an elevated level of endogenous lactoferrin further includes contacting said antibody bound sample with enzyme-linked polyclonal antibodies such that the enzyme-linked polyclonal antibodies are allowed to bind to capture lactoferrin to create an enzyme-linked antibody bound sample.

8. (Previously Amended) The method as recited in claim 7, wherein said step of determining whether said enzyme-linked antibody bound sample contains an elevated level of endogenous lactoferrin further includes determining an optical density of said readable sample at 450 nm, wherein said optical density corresponds to a level of endogenous lactoferrin in the enzyme-linked antibody bound sample.

9. (Previously Amended) The method as recited in claim 8, wherein if said optical density of said enzyme-linked antibody bound sample is greater than 0.200, said fecal sample contains an elevated level of endogenous lactoferrin.

10. (Canceled)

11. (Canceled)

12. (Currently Amended) A diagnostic assay for determining whether a fecal sample contains an elevated level of endogenous lactoferrin as compared to a reference value for healthy control subjects, said assay comprising:

obtaining a human fecal sample;

diluting said sample;

contacting said sample with immobilized polyclonal antibodies to endogenous lactoferrin to create an antibody bound sample;

contacting said treated sample with enzyme-linked polyclonal antibodies such that the enzyme-linked polyclonal antibodies are allowed to bind to capture lactoferrin to create an enzyme-linked antibody bound sample; and

determining the optical density of said readable sample at 450 nm to determine whether said enzyme-linked antibody bound sample contains an elevated level of endogenous lactoferrin as compared to a reference value for healthy control subjects, wherein if said enzyme- linked antibody bound sample does not contains an elevated level of endogenous lactoferrin, a diagnosis of irritable bowel syndrome is substantially ~~pre~~concluded.

13. (Canceled)

14. (Previously Amended) The diagnostic assay as recited in claim 12, wherein if said optical density of said enzyme-linked antibody bound sample is greater than or equal to 0.200, said fecal sample contains an elevated level of endogenous lactoferrin as compared to a reference value for healthy control subjects.

15. (Original) The diagnostic assay as recited in claim 12, wherein said assay comprises an enzyme-linked immunoassay.

16. (Original) The diagnostic assay as recited in claim 12, wherein said endogenous lactoferrin comprises total lactoferrin from one or more of plasma, bile, leukocytes, and mucosal secretions.

17-20. (Canceled)

21. (New) The method of claim 1, wherein if said sample contains an elevated level of endogenous lactoferrin, a diagnosis of inflammatory bowel disease is substantially concluded.

22. (New) The diagnostic assay of claim 12, wherein if said sample contains an elevated level of endogenous lactoferrin, a diagnosis of inflammatory bowel disease is substantially concluded.

Claim 1 recites a method for diagnosing irritable bowel syndrome and other noninflammatory etiologies by determining that a fecal sample does not contain an elevated level of endogenous lactoferrin. The Sugi reference does not teach or suggest diagnosing irritable bowel syndrome by determining a fecal sample does not contain an elevated level of endogenous lactoferrin. The Sugi reference merely teaches using fecal lactoferrin as a marker for disease activity in inflammatory bowel disease.

The Office Action of September 29, 2005 states that the "maker for inflammatory diseases would obviously preclude the detection of non-inflammatory events." This is not the case. **Lactoferrin is detectable in subjects with IBD, healthy persons as well as subjects with irritable bowel syndrome.** Thus, in order to diagnosis IBS, it would be necessary to determine the level of fecal lactoferrin in subjects with IBS (a non-inflammatory etiology). The level of fecal lactoferrin in subjects with IBS is not determined in the Sugi reference. Furthermore, it has been stated in a previous office action that the cited references are silent as to the measurement of lactoferrin in non-inflammatory disorders (See Office Action dated 3/9/05, page 6). A person of skill in the art could not develop a qualitative assay for diagnosing irritable bowel syndrome without determining the level of fecal lactoferrin in subjects with IBS. This level is needed to define a level of fecal lactoferrin to target a cut-off of the development of a diagnostic assay.

As there is no motivation or suggestion for determining the level of lactoferrin in subjects with IBS, it is not possible for the Sugi reference to teach or suggest a level of fecal lactoferrin to determine the level of fecal lactoferrin needed to diagnosis IBS. As the Sugi reference neither teaches nor suggests a method for substantially diagnosing irritable bowel syndrome by determining a fecal sample does not contain an elevated level of endogenous lactoferrin, Applicants request withdrawal of the 103(a) rejection of claim 1. As claims 2-5

depend directly or indirectly from claim 1, Applicants request withdrawal of the rejection of these claims as well.

Claims 6-9 and 12-16 have been rejected under 35 U.S.C. 103 (a) as being unpatentable over Sugi in view of Peen et al., Gut, 1993, 34, 56-62 (the "Peen reference). With respect to claims 6-9, as stated above, the Sugi reference does not teach or suggest diagnosing irritable bowel syndrome by determining a fecal sample does not contain an elevated level of endogenous lactoferrin as claimed by independent claim 1.

With reference to claims 12-16, independent amended claim 12 is drawn to an assay determining whether an enzyme-linked antibody bound sample contains an elevated level of lactoferrin as compared to a reference value for health control subjects, wherein the optical density of the enzyme-linked antibody bound sample is read at 450 nm, wherein if said enzyme-linked antibody bound sample does not contain an elevated level of endogenous lactoferrin, irritable bowel syndrome is diagnosed. As neither the Sugi reference nor the Peen reference teach nor suggest a diagnostic assay for diagnosing irritable bowel syndrome if a sample does not contain an elevated level of lactoferrin.

The Sugi reference does not teach or suggest a diagnostic assay for diagnosing irritable bowel syndrome if a sample does not contain an elevated level of lactoferrin. The level of fecal lactoferrin in subjects with IBS is not determined in the Sugi reference. Furthermore, it has been stated in a previous Office Action that the cited references are silent as to the measurement of lactoferrin in non-inflammatory disorders (See Office Action dated 3/9/05, page 6). A person of skill in the art could not develop a qualitative assay for diagnosing irritable bowel syndrome without determining the level of fecal lactoferrin in subjects with IBS. This level is needed to define a level of fecal lactoferrin to target a cut-off of the development of a diagnostic assay.

The Peen reference also does not teach or suggest a diagnostic assay for diagnosing irritable bowel syndrome if a sample does not contain an elevated level of lactoferrin. The Peen reference merely teaches detecting high frequencies of IgG anti-lactoferrin antibodies, not lactoferrin itself, in serum samples from patients with ulcerative colitis and primary sclerosing chloangitis. The Peen reference differs from independent claim 12 in that it detects IgG anti-lactoferrin antibodies in serum, not lactoferrin in fecal samples. The Peen reference also does not teach diagnosing IBS if a fecal sample does not contain an elevated level of lactoferrin as claimed by claim 12 of the present application.

As the Sugi reference and the Peen reference neither teach nor suggest a diagnostic assay for diagnosing IBS if a fecal sample does not contain an elevated level of lactoferrin, Applicants request withdrawal of the 103(a) rejection of claim 12. As claims 13-16 depend directly or indirectly from claim 12, Applicants request withdrawal of the 103(a) rejection as to these claims as well.

The present application is believed to be in condition for allowance, and Applicants request that a timely notice of allowance be issued for this case. Should any unresolved issues remain in the case, please feel free to contact the undersigned at the phone number listed below.

Respectfully submitted.

Jean M. Dickman

Jean M. Dickman
Reg. No. 48,538

JMD:nlm

SHOOK, HARDY, & BACON L.L.P.
2555 Grand Boulevard
Kansas City, MO 64108-2613
TEL 816.474.6550 + FAX 816.421.5547